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The magnitude of bacteremia is a predictor for long-term mortality in patients hospitalized with non-typhoid salmonellosis

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Background: High magnitude of bacteremia has been associated with a poor outcome in systemic infections. Quantitative blood cultures (BC) are seldom done, but a density index may be derived from the no. of positive BC bottles if inoculated with aliquots of blood. In our region a BC in adults comprises 3 bottles with 10 mL of blood each. We assessed if the index was a predictor for poor outcome in patients hospitalized with non-typhoid salmonellosis compared to patients with a negative BC concurrently with a positive fecal culture. **Methods:** Our historical cohort study covered 10 years, 1994-2003. Data were retrieved from medical records and medical databases and included bacteriology, hospital discharge diagnoses, drugs redeemed from pharmacies, and vital status any time after discharge. A personal identification number allowed accurate linkage of databases. We computed Kaplan-Meier curves and did Cox proportional-hazards regression analysis to compute hazard ratio as a measure of mortality rate ratio (MRR) after 30, 180 and 365 days. Tests for trend were also performed. **Results:** The cohort included 105 patients (43, 21, and 41 with an index of 1, 2, and 3, respectively); the reference cohort comprised 115 patients (index 0). The index was associated with both short- and long-term mortality. E.g., the 365-day cumulative mortality was 4.4%, 14.0%, 28.6%, and 41.5% for an index of 0, 1, 2, and 3, respectively. The 365-day MRRs (with 95 % CI), adjusted for comorbidity and age, were for an index of 1: 1.7 (0.5-5.8), 2: 5.2 (1.5-17.4), and 3: 5.3 (1.9-14.9) (p for trend $<10^{-3}$). The 365-day MRRs for the patients presenting with gastroenteritis ($n=189$) were 1: 1.5 (0.4-6.3), 2: 3.2 (0.7-14.1), and 3: 7.2 (2.5-20.6) ($p=10^{-3}$). **Conclusions:** The magnitude of bacteremia is a predictor for long-term outcome, but whether it is causally related to long-term outcome or it is a marker of underlying diseases remains to be explored.